AFFIDAVIT OF LAWRENCE STILWELL BETTS

I, Lawrence Stilwell Betts, MD, PhD, CIH, FACOEM, declare that:

1. I am a retired United States Navy Captain. In addition, since 2001, I have been the president of my own medical consulting corporation. I routinely consult on, or work with, difficult and complex medical cases where treatment, or exposure or possible consequences of exposure, are in question. My professional associations include a wide variety of government, industry, and professional organizations, as well as academically – and privately-practicing professionals. I also teach, mentor, perform research, develop prevention and treatment protocols, and write medical articles and text chapters. I am a Professor at the Eastern Virginia Medical School where I have had a continuous academic relationship and have been teaching toxicology, previously with the approval of the US Navy while I was on active duty, since 1979. I serve on several national committees addressing broad, as well as specific, issues in occupational and environmental health. I am board certified in both Occupational Medicine by the American Board of Preventive Medicine, and in the comprehensive practice of Industrial Hygiene by the American Board of Industrial Hygiene. Together with the late W. Clark Cooper, MD and Mitchel R. Zavon, MD, I am one of only three "medical scientists" to have ever been elected to Fellowship in both the American College of Occupational and Environmental Medicine and the American Industrial Hygiene Association. The anticipation, recognition, evaluation, and control of hazardous conditions are the fundamentals of industrial hygiene and my practice of preventive medicine and public health. The emphasis of my entire career has been the prevention of illness and the promotion of health through the application of the professional tools of my scientific and medical knowledge and experience. After my retirement from the US Navy, I was presented the VADM Richard A. Nelson Award for my career contributions to Navy and Marine Corps readiness through leadership in prevention of disease and promotion of health

2. During my Navy career, I was assigned to billets with professional duties and increasing responsibilities, initially as a scientist in industrial hygiene and toxicology, and later as an occupational and environmental medicine physician and medical toxicologist. I became one of

EXHIBIT 58

the first physicians to qualify for and be designated as a surface warfare medical department officer. I have spent time at sea on a large number of United States Navy and United States Naval ships and I have worked and directed occupational health programs at Naval shipyards, air rework facilities, weapons stations, and other major shore facilities in the San Francisco Bay area and the Tidewater area of Virginia. I served as a physician on the USS KITTY HAWK (CV-63) during her extensive Service Life Extension Program (SLEP) in the Philadelphia Naval Shipyard from 1987 to 1989. Based upon my scientific and medical training, and experience as a Navy officer for three decades, I am generally familiar with the industrial products that were used by the Navy and the Navy work environments, both ashore and afloat. I am also familiar with the history and practice of the Navy occupational health program from its early days before World War II until the present time.

3. I have been asked to provide my professional and expert opinion regarding the meaning of "special hazard", as that term was used by the U.S. Navy in section 3.5.1.1 of MIL-T-15071B (SHIPS) of 16 August 1954, which was the Navy's military specification for technical manuals in force when construction began on the USS KITTY HAWK at New York Shipbuilding, Camden, N.J., on December 27, 1956. This military specification required certain types of equipment suppliers to include in the technical manuals provided to the Navy with their equipment a "safety notice (where high voltages or special hazards are involved) (see figure 9)". It is my understanding that some plaintiffs in asbestos litigation have contended that the term "special hazards" - as it was understood by the Navy and its contractors in the 1950s - included asbestos. This is an erroneous interpretation of the term "special hazard."

4. There are many hazards on a Navy combatant vessel. These range from the obvious risk of falling down one of the numerous ladders, which may additionally have a "trip hazard" from the cofferdam edge, to falling overboard, or being blown overboard off the flight deck of a carrier such as the USS KITTY HAWK from jet engine exhaust. Electrical hazards are also an important class of hazard, as the entire ship is essentially a conductor, and some electrical systems use up to 440 volts. Steam presents a hazard throughout the ship. Main steam is not only hot (over 900°F in the main system), but it is also under great pressure (1,200 psi in the main system

on the USS KITTY HAWK). A pinhole leak in such a steam system can result in an invisible jet of high temperature and high pressure steam being released which, although audible, only becomes visible several feet away from the point of release. This high pressure steam can instantly sever limbs or rapidly burn or blind an individual. Using various fluids under even greater pressures, hydraulic systems are also found throughout the ship. The ultimate hazard onboard a ship, however, is the potential for fire. The fire hazard may arise from the fuels used by both the ship and her aircraft, the numerous combustible and flammable materials used in construction and operation of a vessel, as well as the numerous industrial chemicals – and even foods (*e.g.*, cooking oils). Even some of the metals used on an aircraft carrier can ignite and burn under appropriate conditions. These metals burn so extremely hot that they cannot be extinguished with water and ordinary fire suppression and control methods. A sub-category of the ultimate fire hazard on a ship, such as the USS KITTY HAWK, is presented by the munitions and related devices (flares and illumination paraphernalia) carried on the ship for use by the ship and aircraft. These not only burn with an extremely high temperature and have the potential to ignite metals; they may also explode and/or contain nuclear materials which can also explode or be disseminated.

5. The Navy has had a standing program for labeling for many years. Steam, water, and fuel lines are labeled and/or color-coded for easy identification and tracing. Some electric "bundles" are labeled – but each individually identifiable wire or cable (identified by outer covering) may not be specifically labeled. Where a potential for human contact is possible, high voltage equipment is labeled – but the ordinary receptacle on the bulkhead is not.

6. A "special" hazard was one that was unique and not ordinary – such as 440 volt electrical systems, pyrotechnics, propellants, and nuclear materials. Hazard must then be defined within the context of use. MIL-T-15071B (SHIPS) of 16 August 1954 provides an example of a "special hazard" for electricity, given in Figure 9 as a warning for work on equipment with voltages over 300 volts; voltages below that level specifically did not require a safety notice. In the context of this specification for manuals, a "special hazard" is not defined, but rather is something that is "extraordinary". The amount and distribution of asbestos-containing products, including thermal insulation, sound and fire-proofing, packings, gaskets, construction materials,

and wire and cable, was enormous on any US combatant ship of the era. Hazard labeling of such diverse, but commonly encountered, materials and articles was simply not expected. Indeed, as a practical matter, any attempt by the Navy to require hundreds of different equipment vendors to attach warning labels to the many tons of asbestos used on an aircraft carrier or other combatant ship of that era would have resulted in literally thousands of warning labels – with potentially conflicting instructions – plastered throughout the ship – and contrary to existing, well-understood and established Navy policy. From the standpoint of the Navy's existing hazard communication program at that time, this would have been a disaster.

7. Furthermore, the expected, routine use and handling of asbestos-containing materials simply presented no significant hazard that was understood by science and medicine of the time period – much less a "special hazard". Toxicity is a property inherent in all chemicals as a consequence of its concentration. All chemicals under certain conditions can cause harm to a living organism. So, all chemicals MAY present a hazard under certain conditions. Again, it is the control of the conditions and the anticipation that harm can result that define a hazard. A "special" hazard would then be one that is extraordinary, or extremely severe or not expected. In the period that this specification was written (1954), the potential hazards of asbestos were believed to be known and understood within the Navy, as well as the scientific and medical communities. This was the state-of-the-art. Exposure to asbestos fibers of a sufficient concentration for a sufficient period of time could cause fibrosis and damage the lung (asbestosis). It was further known to the Navy, and in the scientific and medical communities generally, that development of cancer of the lung could follow from this initial lung damage. Preventing the development of asbestosis through exposure control would then preclude the development of the only known form of asbestos-related cancer at that time – lung cancer. The association of asbestos with the development of a rare and uncommon type of cancer, mesothelioma, was not demonstrated until several years later with the work of Wagner and his coworkers in 1960 (Wagner et al, 1960). Even then, Wagner and coworkers only established an association between mesothelioma and exposure to a specific type of asbestos, crocidolite, under conditions which were totally different than those found in naval applications or aboard ship. The proven

association of amosite (the type of asbestos used extensively for thermal insulation on Navy combatant vessels of this period) and mesothelioma was not established until the work of Selikoff and his associates in 1972 (Selikoff et al, 1972).

8. During the period of time that the USS KITTY HAWK was built, the Navy was confident that it had an occupational safety program that adequately prevented asbestosis, and the possible subsequent development of lung cancer arising from this medical condition, by limiting uncontrolled asbestos release and exposure. Looking back in 1979, two of the most accomplished and famous asbestos researches of the twentieth century – Lee and Selikoff – reflected upon this earlier period:

> *"What's past is prologue!" The decade of the 1960s provides a convenient time at which to terminate a historical view of asbestos disease. With admirable hindsight from the late 1970s we can see that the essential evidence had already been reported, but not yet assembled or vested with sufficient credibility to be entirely convincing. With few exceptions, the evidence at that time rested on scattered reports of small numbers of cases, and the cases themselves suffered from being either selected or simply those that happened to come to the attention of the reporter. The population base from which the cases came was seldom mentioned. The significance of pleural changes and the occurrence of mesothelioma in persons without a distinct history of exposure remained in considerable doubt. The idea that asbestos could be at least a cofactor in the production of bronchogenic carcinoma was far from fully accepted. That parenchymal asbestosis was very likely to occur in those who had been exposed to heavy dosage in the early years of the industry was clear enough, but what effect environmental controls that had been introduced in the late 1930s might have upon its future prevalence was unknown. The possibility that quite low dosages might have grave consequences 30 or more years after first exposure was still unproven."*

Accordingly, the Navy did not hesitate to require that dozens of tons of asbestos be used on the USS KITTY HAWK, as well as essentially every other significant Navy ship of that era. In fact, asbestos-containing materials were knowingly used to control ***other*** hazards – thermal stress, electric shock, fire propagation and spread, as well as to increase the efficiency of the ship's "steam cycle" operation. The Navy evaluated the Naval necessity and use of asbestos-containing products and controlled the hazard from asbestos in order to enable the use of this material in the construction and operation of the major warships of the period.

9. The "special hazard" provision found in the Navy's specification MIL-T-15071 (later re-designated MIL-M-15071 in later revisions beginning in September 1957) required turbine manufacturers, for example, to provide a "safety notice" for serious and imminent hazards of injury or death that were "special" or particular to their turbines. Similarly, boiler manufacturers were similarly asked to provide safety notices for imminent hazards of injury or death that were particular to boilers. In contrast, the use of asbestos insulation materials on these pieces of equipment was required by the U.S. Navy. The insulation materials themselves were not even provided by the equipment manufacturers – they were specified by the Navy and designed, manufactured, sold, and applied by third parties in conjunction with the thermal insulation on the miles of steam and other pipes which traversed the entire ship. There was nothing "special" about the Navy's use of asbestos on a boiler or turbine that differed in any way from the Navy's liberal use of literally dozens of tons of asbestos throughout the ship. Accordingly there was no "special hazard", and there was absolutely no need for another, potentially confusing warning to be added by an equipment manufacturer addressing a potential hazard arising from the known use of insulation material, provided by a third party, and used under the knowledgeable oversight of the US Navy.

10. In conclusion, it is my opinion to a reasonable degree of medical and scientific certainty, and based on my entire professional career as a Navy Industrial Hygiene Officer and Occupational Medicine physician, that the hazards of asbestos insulation, gaskets, packings, and other asbestos-containing products used pervasively throughout US Navy warships like the USS KITTY HAWK, did not constitute a "special hazard" as that term was used and understood by the Navy and its contractors in the 1950s. It is also unreasonable to conclude that the Navy's use of the term "special hazard" in a 1954 military specification was some sort of blanket "invitation" to equipment manufacturers to provide gratuitous advice about insulation products which they did not make or sell—and most of all, these equipment manufacturers were not subject matter experts possessing additional or extraordinary asbestos-related information.

I declare under penalty of perjury under the laws of the United States of America that the foregoing facts are true and correct. Executed this 18th day of December, 2009.

Lawrence Stilwell Betts, MD, PhD

Signed this 18th Day of December 2009
County of York State of Va

SETH W. BLANTON
Notary Public
Commonwealth of Virginia
7110844
My Commission Expires Jun 30, 2011